CONTRIBUTION

TO THE

ICHTHYOLOGY OF AUSTRALIA.

No. VIII.—FISHES OF WESTERN AUSTRALIA.

The Rev. Mr. Bostock, the learned clergyman of Freemantle, has most kindly forwarded me a considerable number of the fishes that live in the part of Western Australia where he resides.

Mr. Bostock deserves the greatest praise for the zeal, activity, and intelligence that he has, for many years, shown to the cause of natural science, and all parts of zoology owe him much. The number of new insects and rare shells he has discovered is very considerable, and it will be seen that his ichthyological researches have been no less valuable.

EDELIA.

Seven branchiostigals; teeth, all similar, rather large, slender, arched, crowded on each jaw and on the palatine bones; no canine; two dorsals only continuous at the base; the first with seven spines; the anal with three; præoperculum smooth; operculum with two spines; scales rather large and rather adherent; lateral line interrupted.

This new genus of *Percidæ* comes near *Microperca*, and has the general form of *Psammoperca*. It has also some connection with *Ambasis*, but has no recumbent spine in front of the dorsal.

EDELIA VITTATA.

Form, oval; rather high; the height being contained three times in the length without the caudal; back, convex, but the anterior profile running almost straight to the snout; head rather pointed; lower jaw considerably longer than the upper one, which makes the cleft of the mouth oblique; all the parts of the head covered with rather large scales similar to those of the body; the head is contained a little less than three times in the length without the caudal; the præorbital is strongly serrated; the eye is equal to the snout and contained about three times and a-half in the length of the head; the præoperculum is rounded, and the operculum also; but this has two rather strong spines separated by an emargination; scales rather large, deciduous, numbering about thirty-two on the longitudinal line, and about fourteen on the transverse one; the dorsal is rather remote on the back; being inserted at a distance very nearly equal to the snout, and the insertion of the caudal fin; the spiny part is formed of seven strong spines; the first is the shortest; the second more than twice its length, strong, flat, curved and pointed; the others become shorter as they are inserted further on the back. The second portion of the dorsal is formed of one spine and of nine rays. These fins have the height of one-half the body; the tail is rather long; the caudal is long, rounded, and formed of sixteen long rays; the anal has the form of the second dorsal, and is composed of three strong spines, the first much shorter, and the two others nearly equal between themselves; the soft part is composed of seven rays; the ventrals are rather long, inserted below the pectorals; these are placed rather low on the body, and are formed of twelve rays. The lateral line follows the profile of the back, but stops a little before the end of the second dorsal; it begins again below, and follows to the centre of the insertion of the caudal. After having been preserved in liquor the colour is of an olive-green, with a broad, straight, longitudinal band of a fine red colour extending from the posterior part of the operculum, at the height of the eye, to the base of the caudal; below this the body is silvery, each scale being bordered

with olive; the belly is pink; the fins of the same olive-green as the head and body.

My largest specimen is two inches and eight-tenths long.

These very pretty fishes were found by the Rev. Mr. Bostock in the fresh waters of the interior of Western Australia.

EDELIA VIRIDIS.

Height of body contained twice and eight-tenths in the length without the caudal fin; head rather pointed, three times and one-fifth in the same; lower jaw longer than the upper one; the form of the body is oval, and the upper profile descends in a regular, slightly convexed way, to the snout; the præoperculum is rounded; the opeculum has two points, the lower being longer than the other; the upper part of the head and all the opercular pieces are covered with scales similar to those of the body; these scales number twenty-eight on the longitudinal line from the end of the operculum to the base of the caudal, and thirteen on the transverse one. They are rather large, punctulated, covered with concentric lines, and their edge is ciliated. The first dorsal is placed rather more in front than in *E. Vittata*. It is formed of seven spines of the same form as those of that species; the second dorsal has one spine and nine rays; the last of these rather prolongated; caudal pointed, the central rays being longer than the others; anal of three spines; the first of which is the shortest, and the other two nearly equal; the soft portion is formed of eight rays, and has the same form as the corresponding dorsal; ventrals and pectorals placed as in *Vittata*, the latter of thirteen rays.

The colour is of a dark olive-green, with the lower parts lighter. There is in some specimens a black blotch behind the operculum, over the insertion of the pectorals, and in others a rather oscellated spot on the base of the caudal fin; the fins are of an obscure yellow.

The largest specimens are less than an inch and a half long. They were found in fresh-water in the interior of King George's Sound by Mr. Maxwell.

Nota.—The interruption of the lateral line is a character very rarely met with in the *Percidæ*, and, I believe, only observed in some sorts of *Ambassis*—in fact, the fish I here describe comes very near to that genus, but I can find no trace of the recumbent spine of the dorsal.

BOSTOCKIA.

One dorsal fin formed of two parts; the first rather short, and composed of eight spines; anal with three spines; tongue smooth; teeth very numerous, small, viliform, forming a transverse band on the vomer, and extending backwards on each side to the throat; opercules forming backwards, a bifide spine; præoperculum with spines at its lower edge; scales small; head cavernous, without scales.

This genus of *Percidæ* appears nearly allied to *Glaucosoma*.

BOSTOCKIA POROSA.

The upper profile is convex and rather gibbous on the back; the head is rather elongate and pointed with the snout inflated; the lower jaw is longer than the upper one; the height of the body is contained four times and one-third in the total length, or three and a-half times in the same without the caudal; head less than three times in the last dimension; eye as long as the snout, and contained four times and a-half in the length of the head; the nostrils are very large, and the upper surface of the snout very uneven, covered with short ridges and deep pores and holes; similar ones are seen below the eye and on the lower jaw; all the opercular pieces are covered with scales similar to those of the body; the lower edge of the external limb of the præoperculum is armed with strong spinous teeth directed forwards; a bunch of smaller, but similar ones, at the anterior edge of the upper limb; there are two larger pores on the posterior part of the præoperculum; between its two limbs and the edge of the internal one there are corresponding notches; scales of the body small, numbering about forty-five on the longitudinal line, and twenty on the transverse one; those on the belly very small; the lateral line

follows regularly the profile of the back to base of the caudal; dorsal having a spinous portion, shorter than the other and formed of eight spines; the first of which is short, the second about twice its length, the third the longest of all, and the others becoming shorter as they are situated further backwards; the soft portion of the fin composed of sixteen rays; the first seven going gradually on increasing; the following at least one-third longer; these are about one-half the length of the head; the caudal is rather large, rounded, and is formed of sixteen rays; the anal has three spines; the first of which is very short, and the two others about equal; the soft part is formed of eleven rays; they grow longer as they extend backwards and become as long as those of the correspondent dorsal; but the last are rather shorter; the ventrals are below the pectorals, and have a rather long spine and five rays; the pectorals are rather large, with twelve rays.

Colour of an uniform dark brown, with the fins black.

Length of the largest specimen, a little over five inches.

Found by Mr. Bostock in the small water-courses of the interior of Western Australia.

ARRIPIS TRUTTACEUS.

Centropristes? Truttaceus, *Cuv. and Val.*, iii., p. 50.

Two specimens about ten and eleven inches long.

Called at Freemantle *Sea Herring*.

THERAPON ELLIPTICUS.

Therapon Ellipticus, *Rich., Ereb. and Terror, Fishes*, p. 118, pl. 52.

I received with much pleasure several specimens of this fish, as it allows me to ascertain that I was right in separating it from the sort inhabiting the Murray (*Th. Richardsoni*).

In *Th. Ellipticus* the body is more elongate; the back less convex, and the head more so and much higher; thus the upper profile is more of a regular elongate oval than in the Murray sort.

The height of the body is contained less than three and a-half times in the total length; the head a little more than four

times in the same; the eye is three times and a-half in the length of the head. The præorbital spines are very small; those of the præoperculum very large, but further apart than in *Richardsoni*, and some of them are much larger than the others; the spines of the caracoid are not visible externally on specimens preserved in liquor. The scales of the body are smaller, and number about eighty-six on the longitudinal line, and forty-seven or forty-eight on the transverse one; the fins are very similar in both sorts; the caudal is more truncated in the Swan River fish.

The colour after having been in spirits, is very silvery; some specimens have round black spots dispersed over the back and the head; there is always a longitudinal band of the same colour below the eye; the fins are reddish, with the caudal and the soft parts of the dorsal and anal covered with black rounded spots. In some specimens the pectorals have transverse obscure lines.

THERAPON CAUDOVITTATUS.

Datnia Caudovittata, *Rich., Ereb. and Terror, Fishes*, p. 24, pl. 18.

Therapon Caudovittatus, *Gunther, Cat.*, vol. i., p. 284.

Body higher and rather shorter than in *Richardsoni*; the height is three times and one-quarter in the total length; the head is three times and two-thirds in the same, and the eye a little less than four times in the length of the head; the upper profile is very convex, and extends regularly to the mouth; the teeth are rather short and thick; the præorbital is finely denticulated; the caracoid strongly denticulated; the præoperculum is rather strongly but regularly denticulated; the scales are rather large and number about fifty-eight on the longitudinal line, and about twenty-eight on the transverse one, nine of these are above the lateral line.

The dorsal is formed of thirteen slender spines; the first four ones being shorter than the others, which become themselves shorter as they are situated further back; the soft portion is rather short, but much higher than the last spines, of nine

rays; the caudal strongly emarginated, of eighteen long rays; the anal has three spines, the first of which is short and the other two nearly equal; the second being rather the longest; the soft portion much longer than the spines of seven rays; the pectorals of fifteen rays; the spine of the ventrals slender.

The general colour is silvery, with some faint small dark spots on the body; the fins are of a bright reddish yellow, with a few marmorated dark spots on the membranes of the spines, and round black ones forming transverse lines on the soft part of the dorsal. The caudal has similar spots disposed transversely, and a large black blotch on each lobe of the caudal placed transversely; the other fins have no spots.

Length of specimen from eight to nine inches.

Nota.—I believe this to be the *Caudovittatus*, but the dorsal fin is very strongly notched, and the last spines are much shorter than the soft portion, contrary to Dr. Gunther's description, and it may prove a different species, which I should then call *Bostockii*.

Mr. Bostock says that this sort is known under the name of *yellow tail* at Freemantle, and that its flesh is firm and very savoury; that it is rarely offered for sale, and that it is caught with line and net near rocks in the Swan River.

HELOTES.

This genus is very nearly allied to *Therapon*, but is easily distinguished by the teeth, which are trilobated.

HELOTES SEXLINEATUS?

Therapon Sexlineatus? *Quoy. et Gaim. Uranie. Poiss.*, pl. 60, fig. 1.

Helotes Sexlineatus, *Cuv. and Val.*, vol. iii., p. 149, pl. 56.

Helotes Octolineatus, *Jenyns, Beagle Fishes*, p. 18.

Silvery, with the back blue; eight longitudinal and obscure bands on each side; the upper part of the head is black, and there are two longitudinal bands of the same colour on each side of the head; the upper one crossing the eye; fins reddish;

a few transverse narrow obscure lines on the caudal. This is certainly the *Hel. Octolineatus* of Jenyns, but I believe it to be only a variety of *Sexlineatus*, as the two lower longitudinal lines are very subject to disappear.

UPENEUS VLAMINGII.

The specimen, similar to those of Victoria, is about eight and a-half inches long.

PAGRUS UNICOLOR.

Already known, from New South Wales, Queensland, Victoria, and North Australia; it also extends to New Zealand, and seems to inhabit all the Australian Seas, but I do not believe that it is found either at the Cape of Good Hope or in China as stated, with doubt, by Dr Gunther.

CHRYSOPHRIS AUSTRALIS.

Is also called *Bream* at Freemantle.

NEOCHÆTODON.

One dorsal with eleven spines; no canines; a small pre-eminence with a bifide tooth on the palate; operculum not denticulated, but strongly emarginated behind; præoperculum strongly serrated at its posterior edge and at its rounded part; anal with three strong spines, the second very large; scales small, adherent; body high; the teeth are very long, arched, and pointed, crowded on several lines; mouth small.

The strong denticulations of the præoperculum separates this genus from *Chætodon*, and with its palatal tooth would place it with *Percidæ*, if it was not for all its other characters.

NEOCHÆTODON VITTATUM.

Form oval, high; back gibbous; height only about twice in the length without the caudal; head three times and one-third in the same dimension; eye large, of the length of the snout, and contained three times and one-third in the length of the head; this last is entirely covered with small scales; præorbital serrated; operculum strongly emarginated. Dorsal

having its spinous portion much longer than the other; the first spine is rather short, the second about twice as long, the following about one-third longer; the fourth being the longest of all, and the following becoming shorter as they are situated more backwards. The longest spine is equal to the distance between the extremity of the muzzle and the centre of the eye. The soft portion of the dorsal is incomplete in my specimen; caudal emarginated, of seventeen long rays; anal with three spines, the second very large, flat, and arched, the soft portion incomplete; the pectorals are slightly in front of the ventrals, they are rather small, and have fifteen rays; the spine of the ventrals is long and slender.

The body scales are very small, and number about forty-five on the longitudinal line, and about twenty-two on the transverse one; there are no scales on the spinous portion of the fins (the only one preserved on my specimen).

The colour is of a light yellow, with six broad longitudinal streaks of a fine black on the body; the two inferior ones curved downwards; the dorsal has also a blue band, but the other fins are of a uniform yellow.

The specimen is not quite three inches long and very incomplete.

This sort must be very nearly allied to *Chæt. Strigatus*, and I should have united it with it if it had not been that the operculum is not rounded but has a strong emargination, and that the denticulations of the operculum seem still stronger in the Australian than in the Indian species; its scales appear also to be less numerous than in the latter. In all cases they both belong to the same genus.

TRIGLA AMŒNA.

Scales very small, those on the lateral line without any armature; snout elongate; upper profile concave; the anterior part of the head rather bilobed; the space between the eyes is very concave, and is less than the diameter of the eye; this space has on each side several longitudinal striæ; a cranulated ridge in front of the orbit; the cheeks granu-

lated and covered posteriorly with radiated striæ; the posterior part of the upper surface of the head strongly granulated; the inferior portion of the præoperculum forming a prolonged angle but no point; the operculum pointed. The lateral line is straight and prominent, like in *Polyommatus*; the first dorsal formed of nine spines; the first rather shorter than the second, and of about the length of the fourth; the second dorsal has fifteen rays; the caudal is emarginated and is formed of eight long rays and numerous shorter ones; the anal of fourteen rays; the pectorals are very large like wings, and attain the root of the tenth anal ray; they are formed of ten rays; the ventrals are large, of six rays.

According to Mr. Bostock's notes, the fish, when alive, was of a lavender grey, with its lower parts silvery and of a light milky blue; the dorsal spines pink, a black blotch extending on the upper and anterior part of the fin to the third spine; the fins pink, with the posterior part of the caudal of a similar but darker colour; eyes blue; the large pectorals of an olive green, with numerous oblong spots of a dull cobalt; the eyes of the same colour; a very large black blotch near the inner side; this blotch is also covered with spots; the three free pectoral filaments of the colour of the belly.

I have received two specimens, preserved in liquor, each six inches long, and this is said to be the usual size of this sort, which is said to be very scarce; but since, Mr. Bostock has sent me a dried specimen measuring eight inches.

PENTAROGE MARMORATA.

Apistus Marmoratus, *Cuv. and Val.*, iv., p. 416.

Mr. Bostock says that it is called at Freemantle *Devil fish*, that the spines cause intense pain, and that it is dreaded alike by the native and the white population.

PLATYCEPHALUS FUSCUS.

Similar to the specimens from Victoria, the specimen is twenty-one inches long.

PLATYCEPHALUS LÆVIGATUS.

Also similar to those from the Victorian coast, and of the same size.

SILLAGO CILIATA.

Sillago Ciliata, *Cuv. and Val.*, vol. iii., p. 415.

———————— *Cuv. Règn. An. Ill. Poissons.*

———————— *Gunth.*, vol. ii., p. 245, pl. 13.

The præoperculum is very finely cranulated; no silvery band on the sides; the lateral line has seventy scales.

Several specimens in the liquor averaging about twelve inches long, and a dried one fourteen. Mr. Bostock says it is "found on patches in river and at sea; esteemed very delicate, some are spotted; only found in the river in summer."

This sort was first discovered at Cape York, and as Dr. Gunther has seen it from Tasmania and Sydney, it appears to be found all round the continent of New Holland, but I believe it must be very scarce on the southern coast, and it seems to be very common on the northern and western parts.

Nota.—The absence of the silvery band on the sides makes me have some doubt about this being the real *Sil. Ciliata*, and the character of the serrated or rather finely cranulated præoperculum is to be observed in several other species. If this should prove different, I propose calling it *Sillago Bostockii*.

SPHYRÆNA NOVÆ HOLLANDIÆ.

Mr. Bostock has sent me a specimen twenty-six inches long, which is absolutely similar to those of the Victorian sea. The dentition appears to be subject to much variation in this species, probably according to age.

CARANX GEORGIANUS.

Caranx Georgianus, *Cuv. and Val.*, ix., p. 85.

Specimens similar to those from Melbourne; the largest was nine inches in length.

TENNODON SALTATOR.

Scomber Saltator, *Bl. Schn.*, p. 35.

Large specimens, one near sixteen inches long, and the other twenty-two; they also bear in Western Australia the name of *Skip Jack*.

ELEOTRIS OBSCURUS.

In division, "snout of moderate length; head as in *Gobius*; no black spot on the root of the pectorals." Præoperculum without a spine; head large and broad; its length being four times in the total length of the fish; the space between the eyes is contained four times and two-thirds in the length of the head; the orbit in its greatest breadth is six times in the total length; the head is naked; some elevated longitudinal lines are seen on the præoperculum. The lower jaw is rather longer than the upper one; the teeth are small and disposed on each jaw in numerous rows; the throat is very much inflated; the body is narrower than the head; the cleft of the mouth is rather oblique; there are thirty-seven or thirty-eight scales on the lateral line, and eleven on the transverse one; these scales are ciliated on the edge, and entirely striated longitudinally.

First dorsal with nine rays; second dorsal with nine; anal with eight; these two last fins are high, and their rays are rather longer than the others; the ventrals and pectorals are of the same length, and end a little before the posterior root of the first dorsal; the last have thirteen rays; the caudal is contained five times in the total length; it is elongated, rounded, and formed of fourteen rather long rays and of several shorter ones.

The colour of the specimen, after preservation in liquor, is a dark brown. The largest specimen is a little over three inches long.

ATHERINICHTHYS EDELENSIS.

Very nearly allied to *A. Modesta Cast.*, but body more elongate; its height being contained near seven times in the total length, or six times and a-quarter in the same length

without the caudal fin; the head is three times and three-quarters in the last dimension; the first dorsal is inserted at an equal distance from the anterior part of the snout and the upper base of the caudal.

For all the rest, the description of *Modesta* applies to this sort.

The specimens are very numerous, but after preservation in spirits, their colours are entirely destroyed; the silvery band on each side is however very visible. The largest specimens are a little over two and a-half inches long.

MUGIL OCCIDENTALIS.

In Dr. Gunther's very able division of this difficult genus, this sort must be placed in the group characterised by "orbit with the adipose eyelid well developed; upper lip not very thick; anal fin with eight soft rays; lateral line with forty-three or forty-four scales;" the maxillary is visible.

General appearance of *Mugil Waigiensis* and the head of the same form; height of the body contained four times in the total length of the fish to the centre of the tail; head not quite as long as the height of the body, contained nearly four and a-half times in the same dimension; snout longer than the diameter of the eye, but contained nearly four times in the length of the head; the breadth of this, behind the eyes, is contained once and a-half in the length of the head and the space between the eyes is contained a little more than twice in the same dimension; the teeth are very numerous and rather large, for the genus, on both of the jaws; the space extending behind the eye and also the adipose eyelid are covered with strong and numerous arched striæ; the head is covered with scales of large size, but these become very minute towards the lips; the longitudinal line has forty large scales, and three or four smaller ones near the caudal. From the transverse line that would pass over the centre of the eye to the root of the dorsal there are twenty scales; the body is very high, and its lower profile very convexed; the scales number fifteen on the trans-

verse line; they are plain, rather rouguous, with a short ridge that does not extend to the root, neither to the margin; the first dorsal is placed at equal distance from the extremity of the snout and the upper base of the caudal fin; it is formed of four spines; the first of which is the longest, and is equal to the space between the eyes; the second dorsal is placed behind the root of the first at a distance rather less than the length of the head; it is formed of a spine and eight rays; the first is not longer, of one half of the height of the first ray; the last is prolongated and pointed; there are a few very minute scales between the rays; the caudal is strongly forked; it is scaly and formed of fourteen long rays; the anal is opposite to the second dorsal, and has the same form; it has three spines and eight rays; the ventrals are inserted at equal distance from the base of the pectorals and the first dorsal; the pectorals are short, broad and scaly; their length is contained one and a-half in the head; they are very far from attaining the vertical from the first dorsal, and their extremity only covers the base of the tenth scale of the longitudinal line; they have fifteen rays. The eleventh and twenty-third transverse lines of scales originate at the root of the first and second dorsal; there is a very large pectoral scale.

The fish seems to have been silvery with the upper parts of an obscured grey; the longitudinal lines are well marked on the specimens preserved in liquor; there is a large golden blotch behind the eye; the length of my specimens, which are said by Mr. Bostock to be of the average size; is about twelve inches; but a dried one he also sent me is fourteen. This sort inhabits the rivers of Western Australia, all the year round, and is a good edible fish.

AGENOSTOMA DIEMENSIS.

Dajaus Diemensis, *Rich., Proc. Zool. Soc.*, 1840.

Very common on the coast of Western Australia.

Mr. Bostock says it is called *Pilchard* in Western Australia, but I think that there must be some mistake.

LABRICHTHYS PARILA.

Tautoga Parila, *Rich.*, *Proc. Zool. Soc.*, 1850, p. 70.

——————— *Rich.*, *Ann. and Mag. Nat. Hist.*, 1851, vol. vii., p. 286.

The head is silvery, marked with brown; the body of a silvery white, with each scale broadly bordered with chocolate-brown. On some specimens there are large blotches of this last colour on each side of the body; the fins are of a light brown; the anal spotted with white.

LABRICHTHYS BOSTOCKII.

This sort enters in Dr. Gunther's division *B*, characterised by: cheeks with only one or two series of small scales.

I at first thought it was *Labrus Tetricus* of Richardson; but I believe it is distinct; the caudal in my species when moderately opened is truncated, but, it is true, that when entirely opened it takes a somewhat rounded appearance, the upper ray being always longer than the others; the dorsal and anal are rather prolongated at their posterior end, and not rounded as in Richardson's figure; the arbuscules of the lateral line are also more complicated in *Bostockii*; the colour of the vertical fins is described in *Tetricus* as having a fine blackish edge, and the pectoral as having a black spot over their base; neither of these exist in the new species. There is a small posterior canine tooth; two anterior large canine ones at each jaw; cheeks with a double series of very indistinct scales, and the largest portion being naked; as in many other species the head is covered with small tubercules; the operculum scaly; the colour after having been in spirits is of an uniform dark purplish red; the fins are lighter, and the base of the dorsal black; the scales are large disposed on twenty-five transverse series; the height of the body is contained a little over three times in the total length.

The specimen is seven and a-half inches long.

LABRICHTHYS EDELENSIS.

This species is very nearly allied to *Lab. Punctulata*, Gunth., and has also the scales of the operculum as large as those of

the body; the præoperculum is almost naked, and has only one line of scales; the arbuscules of the lateral line are very ramified and cover the scales; no scales on the base of the dorsal and anal; a posterior canine; the body is evidently more convex than in most species of this genus, and the body scales are covered with strong transverse striæ.

The colour is uniformly brown with the fins yellow, and there is no appearance of spots on the body.

My only specimen, which is in a bad state, is eight inches long.

LABRICHTHYS PUNCTULATA.

Labrichthys Punctulata, *Gunth.*, *Catal.*, iv., p. 118.

A posterior canine tooth; two strong ones in front at each jaw, the other teeth strong, pointed, becoming shorter as they are situated more backwards; the head higher than long, covered with pores; a series of very indistinct scales on the cheek; those of the operculum as large as those of the body, and having very faint transverse lines; body covered with large scales numbering about twenty-nine on the longitudinal line; the lateral line marked by a series of numerous but very faint arbuscules which cover almost entirely the scale on which they are placed; the last scales at the base of the caudal long and oval.

The general colour of the specimen is, after preservation in spirits, of a very dark brown, entirely covered with small, round, white spots, which have probably been blue in the living animal; these spots do not extend to the head nor over the fins.

The specimen is thirteen and a-half inches long.

PSEUDOJULIS LINEATA.

I only place this sort in the above genus on account of its dorsal having nine spines; it is otherways a real *Julis*, and I consider this character as of little importance in this family, where the spines and rays are so much alike.

The height of the body is contained a little over four times in the total length, and is about equal to the length of the

head; the teeth are conical and directed forwards, they become regularly smaller as they are placed more backwards; in front are two long and rather canine ones at each jaw.

The scales are all equal; the dorsal has nine spines and twelve branched rays; the last are a little longer than the first, and when the fin is not extended, they attain the base of the caudal; this is rounded and formed of fourteen long rays with several shorter ones on each side; they are covered with scales to about one-half of their length; the anal is composed of three spines and twelve of rays; it has the same form as the dorsal; the pectorals have thirteen rays; the ventrals are pointed.

The general colour of the fish, preserved in liquor, is of a uniform light brown, with numerous longitudinal and regular lines of a darker colour extending all along the body; the dorsal and anal appear to have been yellow, and on the first there is a narrow black spot after the first spine.

Total length a little over eight inches.

I have also received from the Rev. Mr. Bostock a dried specimen that I consider to belong to the same species; it is fourteen inches long, and, having been prepared very carefully, and but a short time since, has preserved remarkably well its fine colour; the fish is of a fine red; a black blotch at the end of the operculum and another at the end of the pectoral; there is no trace of the longitudinal bands; the fins are red at their base and yellow on their second half; on this portion there are numerous longitudinal and narrow stripes; the black spot on the dorsal behind the first spine is very visible. The pectorals and ventrals alone have no lines.

GERRES OVATUS.

Gerres Ovatus, *Gunth. Catal.* 1, p. 343, vol. iv., p. 256.

Height of the body about twice and a-third in the total length without the caudal fin, or twice and two-thirds to the centre of the latter; the diameter of the eye is longer than the snout; the dorsal is formed of nine spines and ten rays; the spines are feeble, the first is very short, the three following

about equal, and longer than the others; the fifth, sixth, and seventh grow shorter, and the others are about equal, and not much more than one-half the height of the longest; the caudal is deeply forked; the anal has three slender spines; the first of which is very short and the third the longest of all; the soft rays are seven in number; the colour is silvery, with the upper parts rather blue; the fins yellow.

Nota.—In none of the numerous specimens I have seen does the præorbital form the short spine visible on each side, on some of the specimens of *G. Melbournensis*. I believe this to be *Ovatus* of Dr. Gunther; it is immediately distinguishable from *Melbournensis*, by the height of the anterior part of its dorsal.

CNIDOGLANIS BOSTOCKII.

Head very broad and depressed, its length being a little over five times in the total length of the fish; barbels rather short, the maxillary ones extending a little behind the eye, but those of the nostril only attaining the centre of these organs; lower lip broad, very thick, rather pendant and lobed; the lips are covered with large papillæ; the teeth are rather small, rounded at the end, and form in front at each jaw two small bunches, each of two or three teeth; at the lower jaw there is also an interior row more numerous but of the same form; the vomerine teeth are large, molar-like, and disposed in a triangular way; the eyes are about one-seventh of the length of the head; the skin of the body is transversely riddled; the first dorsal is not prolongated, but rounded at its extremity, and formed of a strong barbed spine and of five rays; the large fin which forms the dorsal, caudal, and anal united, has about two hundred and twenty rays; the ventrals ten.

The colour is, after having been in the liquor, of a black, becoming rather brown on the lower parts.

I have seen two specimens, both about twenty-one inches long.

This sort must be very nearly allied to *Plotosus Megastomus* of Richardson (*Ereb. and Terror, Fishes*, p. 31, pl. 21), and

the principal difference between them consists in the length of the nostril barbels, which are shorter in my species; if I had not seen two specimens absolutely alike, I should have considered this as accidental; the *Plotosus Macrocephalus* of Cuv. and Val., xv., p. 428, pl. 449, seems also to be very nearly allied to these species, but differs by its colouring if the plate is correct; it is said to have been probably found at Timor by Péron, but it is possible that it comes from the Australian coast, which was also visited by the same naturalist.

The Freemantle name of this sort is *Cobbler*; it is said to be dangerous to catch, as it inflicts with its dorsal spine wounds which have sometimes caused death, and always great agony, which lasts, the natives say, "till sun sets."

PLOTOSUS UNICOLOR.

Eight barbs about as long as half the space from the anterior margin of the snout to the base of the first dorsal, and those of the nostrils extending considerably behind the eye; head contained a little over four times and two-thirds in the total length of the fish; it is rather pointed in front; the height of the body a little over six times in the same; eye considerably less than twice in the snout.

The body entirely naked; the lateral line well-marked; the spine of the first dorsal straight and acute; it is equal in length to the space from the anterior end of the snout to two-thirds the length of the orbit; the soft part is much longer than the space, and formed of four rays; the second dorsal begins at a distance from the first, nearly equal to the one which extends from this last to the snout; this fin is united with the anal and caudal; the latter rather rounded at its extremity.

Ventrals rather long, of twelve rays; pectorals also rather long, and formed of a long spine and of nine rays.

Colour of a uniform dark brown, almost black. My largest specimen is seven and a-half inches long.

Found by Mr. Bostock in the small water holes of the interior of Western Australia.

BELONE GAVIALOIDES.

Belongs to the division characterised by "anterior dorsal rays forming a lobe; no lateral edge to the tail; middle and posterior rays short."

Head three times and a-half in the length without the caudal; the snout much longer than the other part of the head; it has a longitudinal sulcate on its upper surface; teeth very fine and very numerous, with a line of large conical ones on each side of both jaws; these are placed far apart one from the other, but on the back part of the mouth they are smaller and near one another; no vomerine teeth; tongue smooth; upper part of the head flat and impressed with two large radiated impressions. The diameter of the eye is contained twice in the interocular space. The upper surface of the head is smooth, but an elongated space in front of the eyes is covered with small scales.

Body rather compressed; its height is less than the length of the pectorals; dorsal with twenty-two rays; anal with twenty-three; caudal strongly emarginated, the lower lobe longer than the other; the pectorals with twelve rays; scales small.

The colour, after preservation in spirits, is of a dark brown, with the lower parts silvery; the snout black; the fins yellow.

The following measurements were taken on the smallest of my specimens :—

	INCHES.
Total length	34
Id. without the caudal	32½
Id. of the head	10½
Id. of the snout	5⅞
Diameter of the eye	⅞
Length of the pectorals	3⅝
Distance from the end of snout to the anterior edge of the dorsal	26½
Id. to the centre of the caudal	8
From the base of the ventrals to the pectorals	7

From base of ventrals to anal	$3\frac{3}{4}$
From base of anal to the central base of caudal.....	8
Length of first dorsal ray	$2\frac{2}{3}$
Id. of caudal to the centre	$1\frac{1}{2}$
Id. to the end of lower lobe	$3\frac{2}{3}$

My largest specimen is forty-one inches long.

HEMIRHAMPHUS MELANOCHIR.

Hemirhamphus Melanochir, *Cuv. and Val.*, vol. xix., p. 41.

Is called *Gar-fish* at Freemantle, where it is only thought edible at certain seasons and not at others; the vertebræ are at times green.

CHATOESSUS EREBI.

Chatoessus Erebi, *Gunther*, *Cat.* vii., p. 207.

———— Come, *Richard.*, *Ereb. and Terror*, p. 61, pl. 38.

Several specimens of a *Chatoessus* are in the collection, which is different from the one I thought to be *Erebi* in the Proceedings of last year; it can be distinguished easily by its much smaller size, the largest being only seven inches long, and they are said to be the average size of the fish, and also by its form, longer and much less elevated; the upper profile is oval, and forms a regular arched line; the height is contained three times in the total length to the centre of the caudal fin, and the head a little over four times in the same; the caudal is very deeply forked and its lobes pointed; the prolongated ray of the dorsal is much longer and is contained three times in the total length; the ventrals are placed a little behind the vertical from the insertion of the dorsal.

The colour is still, after immersion in liquor, very silvery, with the upper parts of the body of a fine light blue; the pectorals, ventrals, and anal are very obscure, and the other fins are yellow.

Mr. Bostock says that it is known under the name of *Perth Herring*, "quantities being smoked with Banksia or sawdust, and sold in the fruit stores; it is so called because it is found mostly about Perth, ten or twelve miles from the sea."

Richardson had thought that the Australian sort of *Chatoessus* he described, might be the *Come* of Russel (*Fishes of Coromandel*, pl. 196), but at the same time he points out several characters which did not agree with the Indian fish. Dr. Gunther places this amongst his doubtful sorts, and gives the Western Australian one the name of *Erebi*.

In the Proceedings of this Society for last year, I considered the Victorian fish as being this *Erebi*, but having since received the above-mentioned specimens from Freemantle, I find that the sort from the rivers of Western Australia is different from the one of the Murray, and that, the name of *Erebi* belonging to the first, I propose calling the other *Richardsoni*.

OPHICHTHYS.

OPHICHTHYS SERPENS.

Ophichthys Serpens, *Lacép.*, vol. ii., p. 198.

Leptorhynchus Capensis, *Smith, South Africa; Fishes*, pl. 6.

The colour is brown; the fins seem lower, and the body proportionately longer than in the European specimens, but I have none of these to compare with the Australian ones.

PHILLOPTERYX ELONGATUS.

One specimen, which seems similar to those from Adelaide.

HIPPOCAMPUS ELONGATUS.

Dorsal fin with eighteen rays standing on three body rings; body elongate; the broadest ring of the body not being one-fifth wider than the first two; tubercules moderately acute; no tentacles; snout as long as half the head; a short thin ridge in front of the eyes; supraorbital spine conical,

rather long, sharp, and pointed; a single conical and rather notched spine in front of the coronet; this with its terminal five points well marked; eleven body rings; the part supporting the dorsal very little higher than the back.

In a dried state the fish is of a light greyish yellow, covered with more obscure brown, irregular, marbled spots.

Length of specimen, three inches in a straight line.

HIPPOCAMPUS SUBELONGATUS.

Dorsal fin with eighteen rays standing on three body rings; body rather elongate, the broadest part not being more than one-third thicker than the narrowest; snout up to the anterior edge of the eye longer than the other part of the head; tubercules moderately acute; a short, thin, rather rounded ridge in front of the eyes; supraorbital spine broad, arched, and rather notched; a single short, blunt, and notched spine in front of the coronet; this rather elevated, directed very obliquely, and ended by five well marked but blunt spines; eleven body rings.

Colour of dried specimen yellow, with transverse brown narrow bands on the snout.

Length, in a straight line, four inches and three-eighths.

Nota.—It is not impossible that this may be a more developed age of *Elongatus*; but the spines of the head are so different as not to allow me to unite them before I see more specimens.

MONACANTHUS BRUNNEUS.

Enters in the division characterised by: anal with less than forty rays; dorsal spine with four series of barbs; the front series much closer together than the hinder series, and formed by small barbs; but does not agree with any of the sorts described by Dr. Gunther.

Skin covered with small spines, truncated at their extremity; body high; its height being only contained a little over twice in its total length; the upper profile of the head is considerably concave; the portion of the back profile, extending from the spinous dorsal to the base of the soft one, is straight or rather

concave ; the ventral spine is rather large, and covered with strong spines disposed in a starlike way ; the diameter of the orbit is contained twice and a quarter in the snout ; the teeth are large and pointed ; the spine of the dorsal is rather arched ; its length is equal to the distance from the extremity of the snout to the centre of the eye ; it is granulated, and the posterior barbs are long ; there is a second ray to the first fin ; the second dorsal is high and formed of thirty rays ; the anal of the same form with twenty-seven rays ; the caudal is rounded and formed of twelve rays ; its length is equal to the distance from the extremity of the snout to the anterior margin of the eye ; the pectorals are formed of thirteen rays ; they are inserted on the vertical of the dorsal spine, which would pass over the centre of the orbit ; no extra spines on the tail.

The colour in spirits is of a dark brown, with the lower parts rather lighter ; the fins yellow.

The size of the specimen is about six inches ; found in the rivers.

MONACANTHUS DISTORTUS.

I have only seen one specimen, in a very incomplete state, of this most singular fish ; the upper part of the skin of the head has been eaten by some insects, and the bone only remain ; the fins are also very incomplete.

The form has something of the one of *Sternoptyx Hermanni* on account of its oblique form ; the upper profile of the head being about straight and oblique up to the dorsal spine ; behind this is a very strong gap or emargination, and from this the profile is very gibbous and elevated ; this part of the body being much higher than the head ; the tail is short and high, almost square ; the lower profile is very much developed in a large rounded ventral pouch, which ends on the vertical from the dorsal spine ; there is no starlike ventral spine ; the profile becomes all at once almost perpendicular inwardly, forming a gap corresponding to the one of the back, and from thence it extends with a rounded form to the tail ; the height taken at the base of the dorsal spine is equal to nine-tenths the

length of the body; the same taken a little backwards, at the two corresponding depressions, is only two-thirds that length; the eye is nearly as long as the muzzle.

The dorsal spine is slender, arched, pointed, covered with short spinous bristles and inserted over the posterior third of the eye. The imperfect state of the specimen does not allow me to state if there is a second ray or a membrane to this fin; the second dorsal has twenty-seven or twenty-eight rays; the caudal is about as long as the head to the base of the dorsal spine, and has fifteen rays; the anal has the same number of rays as the second dorsal; the pectorals are small, formed of ten rays; the body is entirely covered with very short spines, which become longer and more slender on the tail.

The colour is entirely brown, with the fins yellow; the single specimen is two and a-half inches long.

MONACANTHUS PENICILLIGERUS.

Balistes Penicilligerus, *Péron in Cuv. Règn. Anim.*, vol. iii., p. 433, pl. 10, fig. 2, vol. ii.

This most remarkable fish is entirely covered with short spines, and has on its body and fins long filaments; it forms the genus *Chætodermis* of Bleeker. It seems to inhabit all the northern and eastern seas of Australia, and extends to Eastern India.

The specimen from Freemantle is near nine inches long.

Nota.—The filaments in Cuvier's figure are represented much longer than they are in my specimen.

DIODON SPINOSISSIMUS.

Similar to the Victorian specimens.

ARACANA AURITA.

Ostracion Auritus, *Rich., Trans. Zool. Soc.*, vol. iii., p. 184, pl. 9.

According to Mr. Bostock's description, the colours are very splendid on the fresh specimens; the upper parts are of a fine yellowish brown, changing on the head and sides to a beautiful pink-red; the lower parts are of a pale brick colour;

the stripes and bands are of an olive-green ; at the base of the first dorsal spine there is generally a cobalt patch ; the fins are yellow.

The specimens are five and a-half inches long.

ARACANA LENTICULARIS.

Ostracion Lenticularis, *Rich.*, *Proceed. Zool. Soc.*, 1841, p. 21.

I have had two specimens of this fish from Western Australia—one from Mr. Evans, of St. Kilda, and the other from the Rev. Mr. Bostock. They are both in a dried state, and show numerous black spots on the body ; they also have two longitudinal bands of the same colour, one running from the eye to the snout, and the other from the base of the pectorals to the lower jaw. They are both three and a-half inches long.

CRAYRACION.

This genus has been established by Dr. Blecker for *Tetrodons*, having on each side only one nasal opening, and a spiny body.

CRAYRACION MARMORATA.

The upper anterior part of the body, from near the end of the pectorals to the head, covered with rather strong spines placed at considerable distance one from the other; the remaining portion of the body and head is smooth ; dorsal of eleven rays ; caudal of eight long ones; ventrals of ten; pectorals of sixteen ; the upper parts of a dark brown, covered with very numerous, irregular, round, whitish spots ; lower parts and fins of an uniform yellow colour in liquor.

Length of specimen five inches and a-half.

CESTRACION PHILIPPI.

Small specimen, similar to those from the Victorian coast.

RHINOBATUS DUMERILII.

Snout very obtuse, rounded, broad, with semicircular outline. The distance to the outer angles of the nostrils is

three-fourths of that between the mouth and the end of the snout; no spines on the eyes nor shoulders; a median line of strong, compressed, arched spines, placed far apart one from the other; the rostral ridges are arched inwardly, and on their anterior part they are only separated by a narrow groove; the two dorsals large, as long as the interocular space; the dorsal tubercules very feeble between these fins, and not visible at all behind the second. The upper surface is rough, and the back is covered with small rough tubercules. The upper surface is entirely of a light brown, with the snout of the same colour. The lower surface is of a light yellowish white.

The specimen is over fourteen inches long.

Nota.—This sort appears to have a shorter, broader, and more rounded snout than any other of the genus; the distance from the posterior angle of the pectorals to the extremity of the snout, is very little superior to the breadth of the fish. It is named in honour of my late friend, August Duméril.